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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,339	08/29/2001	Frank Muller-Rinke	054821-0837	5922
26371	7590	08/02/2004		
FOLEY & LARDNER 777 EAST WISCONSIN AVENUE SUITE 3800 MILWAUKEE, WI 53202-5308				
			EXAMINER CREPEAU, JONATHAN	
			ART UNIT 1746	PAPER NUMBER

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/941,339	Applicant(s) MULLER-RINKE, FRANK	
	Examiner Jonathan S. Crepeau	Art Unit 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5-18-04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office action addresses claims 1-14. Although the rejection under 35 USC §102 has been obviated, claims 1-14 remain rejected for the reasons of record under 35 USC §103. Accordingly, this action is made final.

Claim Rejections - 35 USC § 103

2. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 19804423 in view of EP 899801.

Regarding claim 8, DE '423 is directed to a lead acid battery having a container, a positive electrode, a negative electrode, and an electrolyte (see abstract; first page of translation). Regarding claims 1 and 8, the battery comprises separators having a plurality of main ribs arranged at regular intervals on the outside (top) surface thereof (see Figure 3). The outermost main ribs (corresponding to the claimed "additional ribs") are located in the vicinity of the edge of the separator. A negative electrode (4) is positioned on the opposite side of the separator (see Figure 3; page 3 of the translation). Regarding claims 2 and 9, the additional ribs are arranged symmetrically with respect to the main ribs (see Figure 3). Regarding claims 3 and 10, all the ribs are integral with the separator base sheet (see Fig. 2).

DE '423 does not expressly teach that the separator comprises a plurality of shorter reinforcing ribs in the area of the lateral edge portions, as recited in claims 1 and 8, or that the

additional ribs are located “in the region of the reinforcing ribs” (claim 1) or “in each of the areas of the lateral edge portions” (claim 8). The reference further does not expressly teach that the positive electrode comprises an expanded metal grid having lateral edge portions having open cut edges, as recited in claims 4 and 11, or the heights of the main, additional, and reinforcing ribs, as recited in claims 5-7 and 12-14.

EP ‘801 is directed to a lead-acid battery comprising a separator that comprises a plurality of main ribs (24) and plurality of small reinforcing ribs (26A,B) on the lateral edge portions thereof (see Fig. 1). Further, the reference teaches that prior art separators have thicknesses of between 0.006-0.015 inches (0.15-0.38 mm) (see paragraph 2), and that the reinforcing ribs have a radius (i.e., height) of 0.008-0.012 inches (0.203-0.305 mm) (see paragraph 10).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use small reinforcing ribs in an area surrounding the additional ribs of the separator of DE ‘423. In paragraph 4, EP ‘801 teaches that “the closely spaced ribs and concave furrows therebetween provide significant resistance to gridwire puncture.” Thus, the artisan would be motivated to incorporate the reinforcing ribs of EP ‘801 in an edge region of the separator of DE ‘423, i.e., in a region surrounding the “additional” ribs, to reduce puncturing of the gridwire of the positive electrode. It should be noted that although DE ‘423 does not expressly teach electrode grids, such grids are conventional in lead-acid batteries and could reasonably be expected to be present

in the electrodes of DE '423. Additionally, such grids would have "open cut edges," as taught in paragraph 3 of EP '801.

Furthermore, the disclosure of EP '801 would be sufficient to render the height ranges recited in claim 5-7 and 12-14 obvious to a skilled artisan. Regarding the thickness of the base sheet of EP '801, the artisan would be motivated to use the prior art thickness (0.15-0.38 mm) disclosed in paragraph 2. This range encompasses the claimed range of 0.15-0.25 mm, thereby rendering the range obvious. Regarding the height of the reinforcing ribs, the reference suggests a low value of 0.203 mm, which would render obvious the claimed range of "approximately 0.1-0.2 mm." Regarding the claimed height of the main and additional ribs (0.45-1.75 mm), the artisan would be motivated use a value within the range because these ribs must be taller than the reinforcing ribs. Accordingly, each of the ranges recited in claims 5-7 and 12-14 would be rendered obvious by the disclosure of EP '801.

Response to Arguments

3. Applicant's arguments filed May 18, 2004 have been fully considered but they are not persuasive. Applicants assert that "[t]he suggestion to make the combination of Kasner et al. [DE '423] and Hercamp et al. [EP '801] has been taken from the Applicants' own specification (using hindsight), which is improper." In response, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the

time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, it is believed that the secondary reference (Hercamp et al.) provides sufficient motivation to incorporate its reinforcing ribs into the separator of Kasner et al. Thus, it is believed that the references fairly suggest the claimed invention without the benefit of hindsight. As such, it is believed that the rejection under 35 USC §103 is proper.

Conclusion

4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

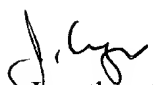
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached at (571) 272-1414. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jonathan Crepeau
Patent Examiner
Art Unit 1746
July 29, 2004